ABSTRACT

A light-receiving element is provided, which may easily detect the barycenter of a light intensity of light having a long-wavelength band in an optical communication. An InGaAs layer (i-type layer) and a p-type InP layer are stacked on an n-type InP substrate. Electrodes are formed on both sides of the top surface of the p-type layer, and an electrode is formed on the bottom surface of the n-type substrate. An incident light impinged upon the light-receiving element is photoelectric-converged into a photocurrent, and the photocurrent flows in the p-type layer to the electrodes. As a result, a current is derived from each of the electrodes, the magnitude thereof being dependent on the distances from the light impinging position to respective electrodes. The barycenter of a light intensity may be calculated from the currents derived from the electrodes and a light intensity may be obtained from the summation of the currents.